

MECHANICAL THERMO-VOLTAIC SOLAR POWER SYSTEM

ABSTRACT OF THE DISCLOSURE

A mechanical thermo-voltaic solar power system (MeTSoPoS) that uses a mechanical generator, instead of the photovoltaic panel commonly in use today, is disclosed. The system is comprised of three major subsystems: (1) a light collector array, (2) a mechanical thermo-voltaic generator, and (3) a storage and retrieval system. At the center of the system is the light collection array comprised of solar collector elements. These collector elements are connected to optical conduits (fiber optic cables) that carry the light energy to a mechanical generator. An automatic aiming system is used to align the collector elements directly at a light source for maximum light output. Each light-collector element is comprised of a set of lenses that focus a larger area of light down to a point small enough to inject into an optical conduit. The optical conduit is then used to carry the light from each collector element to the generator. The system can use either a steam turbine or a Stirling engine type of mechanical generator, which is connected to a standard AC generator for generating electrical power. The heating chamber involves an outer shell where the optical conduits attach and allows the light to shine through to the heating area of either the boiler of a steam turbine or the hot node of a Stirling engine. Additionally, a small hole is provided in the bottom of the heating chamber where a gas burner is mounted to provide an auxiliary means of providing heat to the system. The burner can be fueled by natural gas or from stored hydrogen from the system. Electricity from the system that is not used immediately is redirected to a storage unit, such as a bank of batteries. In the system, electricity can be taken directly form the generator or can be used to charge the batteries and taken from them when needed. The overall system has a means of monitoring the amount of energy being generated and if that is less than is being used for auto aiming and other nonessential functions, it will shut down those functions and switch into energy retrieval mode.